\*\* Perhaps a way around the following issue presented below would be to create an interaction between time of day and temperature. That means the effect of temperature could vary with time of day (i.e. higher detection on warmer nights, and similar detection during the day independent of the weather because surveying consists of rock-rolling and crevice searching.

\*\* Another options is to exclude day time transects and see what the difference makes.

Dominic,

The latest set of tracks are in DropBox, in the folder:

BioGaps Project/Field Data/Scorpion Data/BioGaps Prendini 2017 2 Tracks

As before, I saved to GPX, KML and ESRI (3D) formats. Please check these files are OK or if you need something else, and let me know ASAP.

The difference from last time is the tracks ending in 'LP' are mine, vs. Reginald's ending in 'RC', as requested. The tracks downloaded from the two GPS units (one used by Reginald, the other by me) are named '3' and '4'. NB: You will notice two tracks with the opposite initials (LP/RC) among each set (3 and 4): 2017-12-09 and 2017-12-10. The units got swapped around but the initials on the tracks are correct. (As I said before, it's easy to tell our tracks apart. Mine are always longer and cover a broader area than Reginald's; this applies also to the first set of tracks, which were not labeled 'LP' and 'RC'.)

One further difference from last time: for most pentad-sites there are four sets of tracks (two each for LP and RC). Due to the unseasonally cold weather most nights we did a day track and a night track in order to improve the sampling success. The times on the track names indicate day vs. night sampling (the day tracks in all cases preceded the night tracks for a given pentad-site). The first  two pentad-sites (Hopewell 2017-12-09 and Rietfontein 2017-12-10) had no day track because these areas were flat and basically devoid of rocks or other places to search by day. Doornberg 2017-12-17 had no night track on account of the weather; it was very cold and wet, and the Sneeuberg was covered in mist to the point where you could barely see one meter in front of you.

Day vs. night tracks are obviously not strictly comparable because day sampling involves rock-rolling, rock crevices and burrow excavation, whereas night sampling is mostly walking and picking up scorpions that are active on the surface (moon phase and weather-permitting). Obviously, the temperature readings are meaningless for the day tracks because the scorpions are not active. But you can meaningfully compare sampling effort/scorpion abundance for all the day tracks vs. all the night tracks (i.e., within each set) because they are comparable although for the night tracks, scorpion abundance is very dependent on the weather, in our case the temperature and the wind speed (not recorded). Sampling effort/scorpion abundance is also heavily influenced by the terrain/topography, because the going is much slower (especially at night) across steep and/or rocky terrain.

For all of the above, I'm somewhat skeptical about the merits of these tracks, but I will let you decide

By the way, I passed the temperature buttons to Gigi on 22/12. The one in the yellow plastic card was used by Reginald. I used the other one (it was in a small Ziploc bag when I returned to Gigi).

Hi Dominic

With few exceptions, **no track number means the material was collected inside the Pentad but outside the 1x1.** In most cases this was done in an effort to collect species not found in the 1x1, due to the absence of suitable habitat, as for example in the case of O. pictus at Saltpans Drift.

 The exception is the Hopewell 1x1, where we dug burrows on the first day but didn't record a track. We did night collecting and recorded the tracks in that 1x1 a few hours later. Tracks were recorded for all subsequent day and night collecting in 1x1s.